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Taxonomic status of *Scorpaena rawakensis* Quoy & Gaimard, 1824 (Scorpaenidae)

by

Hiroyuki MOTOMURA* (1), Philippe BÉAREZ (2) & Romain CAUSSE (3)

Résumé. – Statut taxinomique de *Scorpaena rawakensis* Quoy & Gaimard, 1824 (Scorpaenidae).

Une rascasse peu connue, *Scorpaena rawakensis* Quoy & Gaimard, 1824, décrite à l'origine sur la base d'un seul spécimen du nord de la Nouvelle-Guinée, n'a plus été signalée depuis sa description originale et l'holotype a été perdu. L'examen de la description originale a révélé que l'espèce nominale était un synonyme senior de *Scorpaenodes parvipinnis* (Garrett, 1864). Cependant, nous considérons ici *S. parvipinnis* comme un nom valide par "Inversion de préséance" telle que définie par le ICZN (1999).

Keywords. – Scorpaenidae - *Scorpaena rawakensis* - *Scorpaenodes parvipinnis* - Taxonomy.

Scorpaena rawakensis was originally described by Quoy and Gaimard (1824: 325) on the basis of a single specimen collected from northern New Guinea, probably between Rawak and Waigeo Islands in the Bismarck Archipelago, Papua New Guinea. The species was not cited in Cuvier and Valenciennes (1829) or Blanc and Hureau (1968), indicating that the holotype has never been registered at Muséum national d'Histoire naturelle (MNHN). The holotype was collected during the voyage of *L'Uranie* and *La Physicienne* (1817-1820), but Bauchot (1994) did not mention this nominal species when providing information on the voyage of *L'Astrolabe* (1826-1829). In addition, no information on the holotype is available in the databases of world museums, including MNHN; thus the holotype is considered lost. This nominal species has also not been reported since its original description. In this paper, we assess the taxonomic status of *Scorpaena rawakensis* Quoy & Gaimard, 1824 based on the original description.

Terminology of head spines follows Randall and Eschmeyer (2002: fig. 1) and Motomura (2004: fig. 1) with the following addition: the spine on the lateral surface of the lacrimal bone is referred to as the lateral lacrimal spine (Motomura and Senou, 2008: fig. 2; Motomura *et al*., 2011b: fig. 1). Comparative data for species of *Scorpaenodes* are based on examinations of the type and non-type specimens listed in Motomura *et al*. (2009, 2010a, c, 2011a, 2016). Institutional codes follow Sabaj (2016).

RESULTS AND DISCUSSION

Selected characters given in the original description of *Scorpaena rawakensis* are as follows (translated from French into English): dorsal fin with 13 spines and 9 rays; 4 strong spines above orbit; 5 strong spines on single infraorbital row; teeth on vomer, pharyngeals, and gills; pectoral fin large, rounded, with 19 rays; anal fin with 3 spines and 6 rays; caudal fin with 23 rays, 6 of which located at base, spined; dark colors, with large irregular brown spots located on head, body, dorsal, pectoral, and anal fins; and 3.5 inches (= 8.89 cm) total length, body depth 1 inch (= 2.54 cm) (Quoy and Gaimard, 1824).

The number of anal-fin soft rays in most scorpaenids is five, but Quoy and Gaimard (1824) recorded six. This suggests that they did not count the last two soft rays of the anal fin as a single ray even though the pair is associated with a single pterygiophore. It is assumed here that they counted the dorsal-fin rays similarly, meaning that the number of dorsal-fin soft rays originally recorded as nine should be eight. They also described six spinous rays at the caudal-fin base. This count probably represents three exposed procurrent rays on each side of the caudal-fin base. No mention of the presence or absence of teeth on the palatines was given, but they described that teeth were present on the vomer, pharyngeals, and gills. This suggests that teeth were absent from the palatines. These characters mentioned in the original description, 13 dorsal-fin spines, three anal-fin spines, exposed procurrent rays, and no teeth on the palatines, are consistent with the diagnostic characters of the genus *Scorpaenodes* Bleeker, 1857 (see Poss, 1999; Greenfield and Matsuura, 2002; Motomura *et al*., 2009, 2010a, c, 2016).

Eleven species of *Scorpaenodes* are distributed in the western central Pacific Ocean (including the type locality of *Scorpaena rawakensis*): *Scorpaenodes albaiensis* (Evermann & Seale, 1907), *Scorpaenodes bathycolus* Allen & Erdmann, 2012, *Scorpaenodes corallinus* Smith, 1957, *Scorpaenodes guamensis* (Quoy & Gaimard 1824), *Scorpaenodes hirsutus* (Smith, 1957), *Scorpaenodes kelloggi* (Jenkins, 1903), *Scorpaenodes minor* (Smith, 1958), *Scorpaenodes parvipinnis* (Garrett, 1864), *Scorpaenodes quadrispinosus* Greenfield & Matsuura, 2002, *Scorpaenodes smithi* Eschmeyer & Rama-Rao, 1972, and *Scorpaenodes varipinnis* Smith, 1957. *Scorpaena rawakensis* differs from *S. albaiensis*, *S. bathycolus*, and *S. minor* in having rounded pectoral fins (vs elongated fins in these three species; Motomura *et al*., 2009; Allen and Erdmann, 2012), from *S. hirsutus* and *S. kelloggi* in a larger body size (about 9 cm total length vs about 5 cm maximum standard length; Poss, 1999), and from *S. corallinus*, *S. guamensis*, *S. varipinnis*, *S. quadrispinosus*, and *S. smithi* in having five spines on the suborbital bones (probably equivalent to one lateral lacrimal spine plus four suborbital spines in this study) (vs two suborbital spines in the first three species and three spines in last two species).

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(1) The Kagoshima University Museum, 1-21-30 Korimoto, Kagoshima 890-0065, Japan.
(2) UMR 7209, Département "Écologie et gestion de la biodiversité", Muséum national d'Histoire naturelle, 55 rue Buffon, 75231 Paris CEDEX 05, France. [bearez@mnhn.fr]
(3) UMR 7208, Département "Milieux et peuplements aquatiques", Muséum national d'Histoire naturelle, 43 rue Cuvier, 75231 Paris CEDEX 05, France. [causse@mnhn.fr]
* Corresponding author [motomura@kaum.kagoshima-u.ac.jp]

Scorpaena rawakensis is herein identified as possibly conspecific with *Scorpaenodes parvipinnis* because the pectoral-fin shape, body size and coloration, and all meristic characters, including eight dorsal-fin soft rays, 19 pectoral-fin rays, and five spines on the suborbital bones (*i.e.* a lateral lacrimal spine and four suborbital spines), are within the ranges of those found in specimens of *S. parvipinnis* (see Greenfield and Matsuura, 2002; Motomura *et al.*, 2010c). Although *S. rawakensis* (described in 1824) is probably a senior synonym of *Scorpaenodes parvipinnis* (1864), we still treat the latter as a valid name because there is some possibility that *S. rawakensis* is a distinct species not currently known. Even if *S. rawakensis* is conspecific with *S. parvipinnis*, prevailing usage of *S. parvipinnis* must be maintained. ICZN (1999: article 23.9) defined "Reversal of precedence" when the following two conditions are both met: 23.9.1.1. – the senior synonym or homonym has not been used as a valid name after 1899, and 23.9.1.2. – the junior synonym or homonym has been used for a particular taxon, as its presumed valid name, in at least 25 works, published by at least 10 authors in the immediately preceding 50 years and encompassing a span of not less than 10 years. *Scorpaena rawakensis* has not been used as a valid name since 1824 and *Scorpaenodes parvipinnis* has been used as a valid name in at least 25 publications over 10 years between 2002 and 2011: Nakabo (2002), Senou *et al.* (2002, 2006), Greenfield and Matsuura (2002), Allen *et al.* (2003, 2006), Allen and Adrim (2003), Myers and Donaldson (2003), Kimura *et al.* (2003), Randall *et al.* (2004), Randall (2005, 2007), Mundy (2005), Yearsley *et al.* (2006), Fricke and Kulbicki (2006), Ishida (2007), Shao *et al.* (2008), Fricke *et al.* (2009, 2011), Poss *et al.* (2010), Mundy *et al.* (2010), Motomura *et al.* (2010b, c; 2011a), and Satapoomin (2011).

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